avgear

USER MANUAL

AVG-UHD4K-44

Matrix Switcher
4K HDBaseT 4x4

All Rights Reserved
Version: UHD4K-44_2015V1.0

The AVG-UHD4K-44 4x4 HDMI Matrix Switcher is a professional 4x4 HDMI Matrix Switcher that is capable of receiving up to 4 HDMI 2.0 & HDCP 2.2 compliant signals and outputting 4 HDMI 1.4 & HDCP 1.4 compliant signals.

Features

- 4x4 HDMI matrix with 4 de-embedded HDMI audio ports
- HDMI input ports: supports HDMI 2.0, supports signals up to 4K x 2K @ 60Hz & 1080p 3D, backwards compatible with lower HDMI standards, HDCP 2.2 compatible
- HDMI output ports: support HDMI 1.4, capable of transmitting 2560x1080 (60Hz) signals, compliant with lower HDMI standards, HDCP1.4 compatible
- Transmits 4K x 2K @ 60Hz signal up to 15m
- SPDIF ports for de-embedded HDMI audio output
- Powerful EDID management
- Controllable via front panel button, IR, RS232 & optional TCP/IP
- LCD screen shows real-time I/O connection status
- Convenient firmware upgrades through Micro USB port

PLEASE READ THIS PRODUCT MANUAL CAREFULLY BEFORE USING THIS PRODUCT.

This manual is only for operation instruction only, and is not to be used in a maintenance capacity. The functions described in this version are current as at September 2015. Any changes of functions and operational parameters will be updated in future manual versions. Please refer to your dealer for the latest product details.

Version 1.0 1/9/15

SAFETY OPERATION GUIDE

In order to guarantee the reliable operation of the equipment and safety of the user, please abide by the following procedures in installation, use and maintenance:

1. The system must be earthed properly. Please do not use two blade plugs and ensure the AC power supply ranges from 100v to 240v and from 50Hz to 60Hz.
2. Do not install the switcher in an environment where it will be exposed to extreme hot or cold temperatures.
3. This unit will generate heat during operation, please ensure that you allow adequate ventilation to ensure reliable operation.
4. Please disconnect the unit from mains power if it will be left unused for a long period of time.
5. Please DO NOT try to open the casing of the equipment, DO NOT attempt to repair the unit. Opening the unit will void the warranty. There are high voltage components in the unit and attempting to repair the unit could result in serious injury.
6. Do not allow the unit to come into contact with any liquid as that could result in personal injury and or product failure.

TABLE OF CONTENTS

Introduction **1**
Introduction to the AVG-UHD4K-44 ..... 1.1
Features 1.2
What's in the Box **2**
Product Appearance of the AVG-UHD4K-44 ..... **3**
Front Panel 3.1
Rear Panel 3.2
System Connection **4**
Usage Precautions 4.1
Connection Diagram 4.2
Connection Procedure 4.3
System Applications 4.4
System Operations **5**
IR Control 5.1
RS232 Control 5.2
Installation/Removal of the RS232 Control Software 5.2.1
Basic Settings 5.2.2
RS232 Communication Commands 5.2.3
EDID Management 5.2.4
Via RS232 commands 5.2.4.1
Via 4-pin EDID DIP switcher 5.2.4.2
TCP/IP Control 5.3
Control Modes 5.3.1
Control Via TCP/IP Control 5.3.2
Control Via GUI 5.3.3
Scene Menu 5.3.3.1
Control Menu 5.3.3.2
Configuration Properties 5.3.3.3
TCP/IP Configuration 5.3.4
GUI Update 5.3.5
Firmware Update through USB port 5.4
Specifications **6**
Panel Drawing **7**
Troubleshooting & Maintenance **8**

1. Introduction

1.1.Introduction to the AVG-UHD4K-44

The AVG-UHD4K-44 Matrix Switcher is a professional 4x4 HDMI Matrix Switcher that is capable of receiving up to 4 HDMI 2.0 & HDCP 2.2 compliant signals and outputting 4 HDMI 1.4 & HDCP 1.4 compliant signals.

1.2.Features

- 4x4 HDMI matrix with 4 de-embedded HDMI audio ports
- HDMI input ports: supports HDMI 2.0, supports signals up to 4K x 2K @ 60Hz & 1080p 3D, compliant with lower HDMI standards, HDCP 2.2 compatible
- HDMI output ports: supports HDMI 1.4, capable of transmitting 2560x1080 (60Hz) signals, compliant with lower HDMI standards, HDCP 1.4 compatible
- Transmits 4K x 2K @ 60Hz signal up to 15m
- SPDIF ports for de-embedded HDMI audio outputs
- Powerful EDID management
- Controllable via front panel button, IR, RS232 & optional TCP/IP
- LCD screen shows real-time I/O connection status
- Convenient firmware upgrades through Micro USB port
- Easy installation with rack-mounting design

2. What's in the Box

- 1 x AVG-UHD4K-44
- 2 x Mounting ears (6 x Screws)
- 1 x Pluggable Terminal Block
- 1 x IR Receiver
- 1 x Power Adapter (DC 12V/2A)
- 4 x Plastic Cushion Feet
- 1 x IR Remote
- 1 x User Manual

Note: Please confirm if the product and the accessories are all included, if not, please contact your dealer.

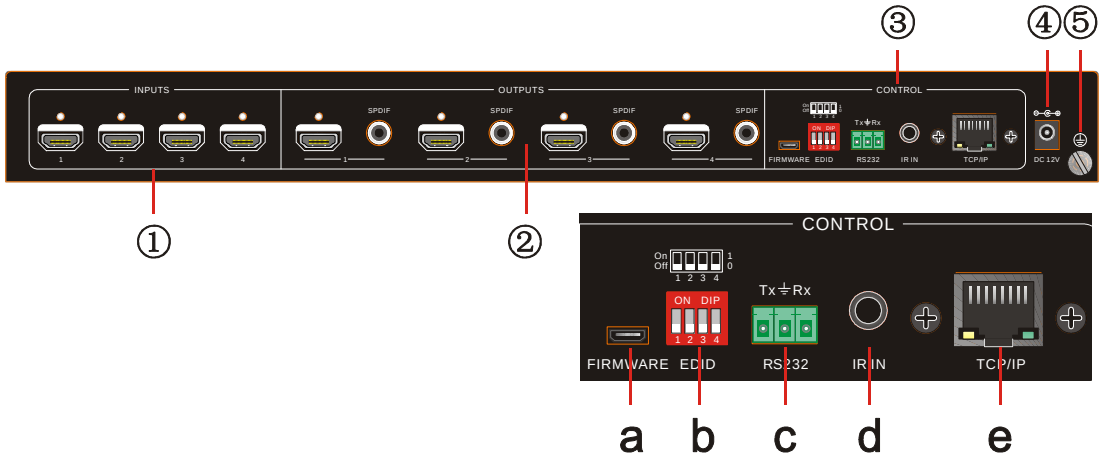
3. Product Appearance of the AVG-UHD4K-44

3.1. Front Panel

No.	Name	Description
①	Power Indicator	Illuminates red when power is on Turns green in standby mode Blinks red when Firmware is upgrading
②	LCD Screen	Displays real-time operation status
③	OUTPUTS	Output selection buttons, press the buttons to switch input cyclically to the output
④	Power	Press to power on/off the switcher

Note: Pictures shown in this manual are for reference only.

3.2.Rear Panel



No.	Name	Description
①	INPUTS	HDMI input ports, 4 in total, connect with HDMI sources
②	OUTPUTS	**SPDIF**: audio output ports for de-embedded HDMI audio, 4 in total
		HDMI: 4 in total, connect with HDMI displays

③	Control	**a) Firmware**: Micro USB port for firmware upgrade
		b) EDID Switcher: 4-pin EDID DIP switchers to set EDID data, “1” stands for “On”, “0” stands for “Off”. Refer to *5.2.4 EDID Management* for more detials
		c) RS232: Serial control port, connect with control device
		d) IR IN: input port for IR control signal, connect with IR receiver
		e) TCP/IP: (optional) TCP/IP port for unit control
④	DC 12V	Connect with DC 12V 2A power adaptor
⑤	Ground	Connect to ground

Note: Pictures shown in this manual are for reference only.

4. System Connection

4.1 Usage Precautions

1. System should be installed in a clean environment with temperature and humidity maintained to within equipment specifications.

2. All of the power switches, plugs, sockets and power cords should be insulated and safe.

3. All devices should be connected before power is turned on.

4.2 Connection Diagram

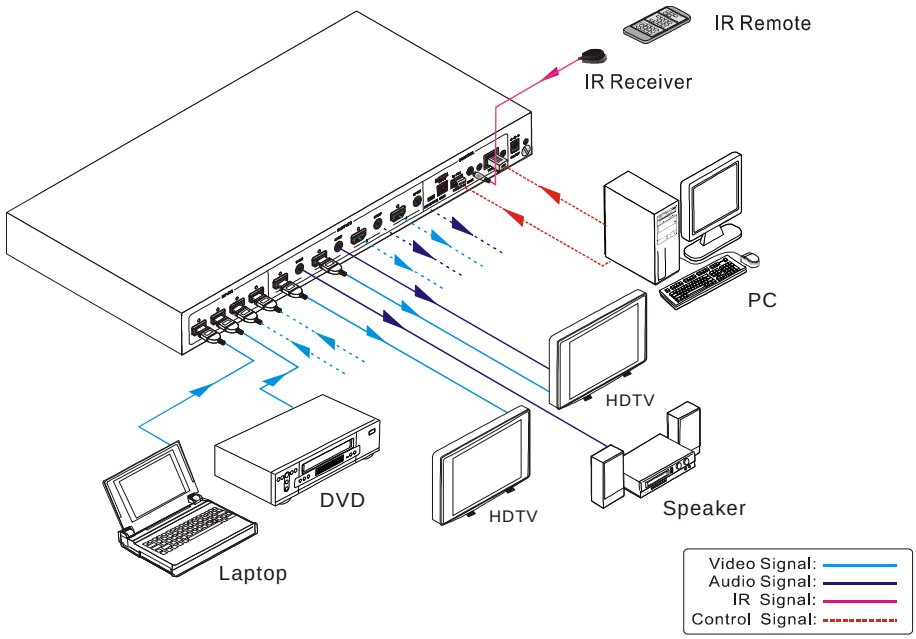


Figure 4- 1 Connection diagram

4.3 Connection Procedure

Step1. Connect HDMI sources (e.g. DVD) to HDMI INPUTS with HDMI cables.
Step2. Connect HDMI displays (e.g. HDTV) to HDMI OUTPUTS with HDMI cables.
Step3. Connect speakers/ amplifiers to the AUDIO OUTPUTs with audio cables.
Step4. Connect the RS232 ports of control device (e.g. a PC) and AVG-UHD4K-44 to enable serial control.
Step5. Connect the TCP/IP ports of control device (e.g. a PC) and AVG-UHD4K-44 to enable IP control.
Step6. Insert an IR receiver to the IR IN port to enable IR control.
Step7. Plug a DC 12V power adapter to the power port of 4x4 HDMI Matrix Switcher.
Step8. When connecting to HDMI 2.0 sources, make sure the HDMI cable is compliant with HDMI 2.0 to ensure reliable transmission.
Step9. Connect amplifiers that are capable to decode HDMI audio to the SPDIF ports.

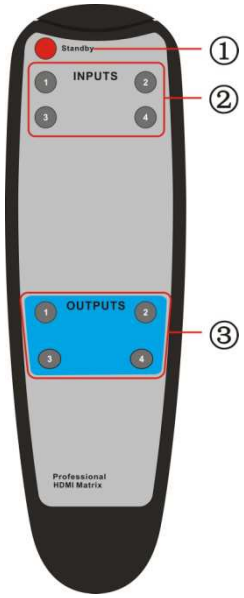
4.4 System Applications

Reliable performance for control and transmission makes the AVG-UHD4K-44 ideal for use in residential, IT, signal monitoring, big screen displays, conference systems, television broadcast, education, banking and security institutions etc.

5. System Operations

5.1 IR Control

Connect an IR receiver to the IR IN port of the switcher, then users can control it through the included IR remote. Here is a brief introduction to the IR remote:



- Standby: Enter/exit standby mode
- INPUTS: Buttons for input selection
- OUTPUTS: Buttons for output selection

I/O Switch Format: INPUT + OUTPUT

Figure 5- 1 IR Remote

5.2 RS232 Control

5.2.1 Installation/removal of RS232 Control Software

- **Installation** Copy the control software file to the computer connected with 4x4 HDMI Matrix Switcher.
- **Removal** Delete all the control software files in corresponding file path.

5.2.2 Basic Settings

Firstly, connect 4x4 HDMI Matrix Switcher with necessary input devices and output devices. Then, connect it with a PC using an RS232 control software program. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as an example. The icon is shown as below*:*

Figure 5- 2 Icon of CommWatch

The interface of the control software is shown as below:

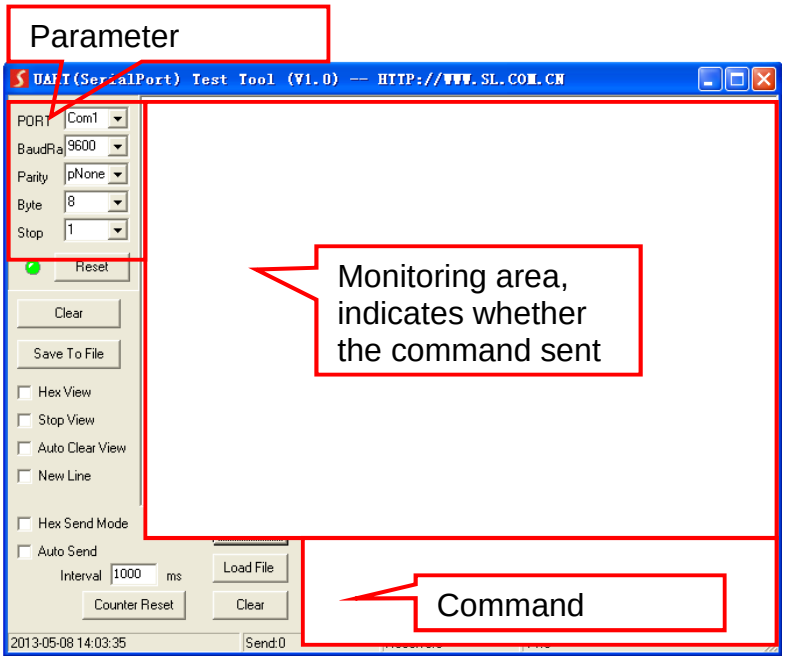


Figure 5- 3 Control Interface of CommWatch

Set the parameters (baud rate, data bit, stop bit and parity bit) correctly to ensure reliable RS232 control.

5.2.3 RS232 Communication Commands

1) Case-sensitive.
2) "[", "]" in the commands are for easy recognition only and not necessary in real operations. Other symbols including ".", ",", "/", "%", ":", "^". are parts of the commands.
3) Feedbacks listed in the column "Feedback Example" is only for reference, feedbacks may vary according to different operations.
4) Dial the EDID switcher to "1111" before sending commands pertaining to software EDID management (with grey background). Refer to *4.4 EDID Management* for detailed information.

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Command	Function	Feedback Example
System Commands		
/%Lock;	Lock the front panel buttons.	System Locked!
/%Unlock;	Unlock the front panel buttons.	System Unlock!
/^Version;	Query the firmware version	VX.X.X
/:MessageOff;	Turn off command feedback from the com port. It will only show	/:MessageOff;

Command	Function	Feedback Example
	commands like “SWITCH OK!”.	
/:MessageOn;	Turn on command feedback from the com port.	/:MessageOn;
/:FeedbackON;	Enable command feedback on LCD monitor on the front panel (default).	/:FeedbackON;
/:FeedbackOFF;	Disable command feedback on LCD monitor on the front panel (default).	/:FeedbackOFF;
Operation Commands		
Undo.	Cancel the previous operation.	Undo Ok!
Demo.	Switch to the “demo” mode, convert input and output in turn like 1B1, 1B2, …4B3,4B4, 1B1… and so on.The switching interval is 2 seconds. Switch to normal mode by pressing any front panel button or sending any other command	Demo Mode
[x]All.	Transfer signal from input x to all outputs	1 To All.
All#.	Transfer all inputs to corresponding outputs,like 1->1, 2->2…	All Through.
[x]#.	Transfer signal from input x to output x.	1 Through.
All@.	Switch on all outputs.	All Open.
[x]@.	Switch on output x.	1 Open.
All$.	Switch off all outputs, but except coaxial outputs for digital audio.	All Closed.
[x]$.	Switch off output x.	1 Closed.
[x]B[y1],[y2],[y3].	Transfer AV signal from input x to output y1, y2, y3	1B2
BlackscreenON[x].	Switch on input x.	BlackscreenON1.
BlackscreenOFF[x].	Switch off input x.	BlackscreenOFF1.
Save[y].	Save the present operation status to preset command y, y=0~11.	Save To F1

Command	Function	Feedback Example
Recall[y].	Recall preset command y, y=0~11.	Recall From F1
Clear[y].	Clear preset command y, y=0~11.	Clear F1
EDIDG[x].	Get EDID data from output x and display it on com port.	
EDIDM[X]B[y].	Enable input x to learn the EDID data from output y. If the EDID data is not available, the matrix will set it to initial EDID data.	EDIDM3B1
EDIDC[x]B[y].	Capture the EDID data of output x and save it as No.y EDID, y=1~15	EDIDC3B1
EDIDExtract[x][y].	Recall No.y EDID data saved through COM port to input x, y=1~15	Pick up success
UpgradeSoftwareEDID[y].	Save the EDID data to No.y EDID, recall the EDID by sending command EDIDExtract[x][y].	Please send the EDID file Upgrade success
EDIDUpgrade[x].	Upgrade the EDID data of input x (x=1~4: upgrade the EDID of single input; x=9: upgrade the EDID of all inputs) Send EDID file (.bin) within 10 seconds.	Please send the EDID file Upgrade success
UpgradeIntEDID[x].	Upgrade embedded EDID data No.x, x=1~10. (Refer to *4.4 EDID Management* for detailed information of embedded EDID data) Send EDID file (.bin) within 10 seconds.	Please send the EDID file

<table>
<tr><th>Command</th><th>Function</th><th>Feedback Example</th></tr>
<tr><td>EDID/[x]/[y].</td><td>Recall embedded EDID data No.y to input x, y=1~10<table><tr><th>y=1~10</th><th>EDID information</th></tr><tr><td>1</td><td>720P 2D 5.1CH</td></tr><tr><td>2</td><td>720P 3D 5.1CH</td></tr><tr><td>3</td><td>720P 2D 2CH</td></tr><tr><td>4</td><td>720P 3D 2CH</td></tr><tr><td>5</td><td>1080P 3D 5.1CH</td></tr><tr><td>6</td><td>1080P 2D 5.1CH</td></tr><tr><td>7</td><td>1080P 3D 2CH</td></tr><tr><td>8</td><td>1080P 2D 2CH</td></tr><tr><td>9</td><td>2016P 2D 5.1CH</td></tr><tr><td>10</td><td>2016P 2D 2CH</td></tr></table></td><td>EDID/4/3</td></tr>
<tr><td>EDIDPCM[x].</td><td>Set the audio of input x to PCM in EDID database.</td><td>EDIDPCM1</td></tr>
<tr><td>EDIDH[x]B[y].</td><td>Copy the EDID data from output x to input y
If the EDID data is available and the audio part supports not only PCM format, then force-set it to only support PCM. If the EDID data is not available, it will set to initial EDID.</td><td>EDIDH1B1</td></tr>
<tr><td>PWON.</td><td>Work normally.</td><td>PWON</td></tr>
<tr><td>STANDBY.</td><td>Enter standby mode.

(Return to normal mode via front panel buttons/ any other command/ IR remote)</td><td>STANDBY</td></tr>
<tr><td>/%[x]:[y].</td><td>Manage HDCP status of outputs
“x” stands for output port, can be 1~4 or ALL. When x=ALL, it means manage HDCP status of all outputs.
“y” stands for HDCP status, can</td><td>/%ALL:0.</td></tr>
</table>

Command	Function	Feedback Example
	be 1 (with HDCP) or 0 (not with HDCP).	
%0801.	Enable auto HDCP management (HDCP Active)	%0801.
%0911.	Reset to factory default. (Switch mode: all through; scene/ HDCP status remains the same)	Factory Default
DigitAudioON[x].	Enable the SPDIF audio output of output x. ● x=1~4, enable the SPDIF audio output of single output port. ● x=9, enable the SPDIF audio output of all output ports.	DigitAudio ON with Output 4
DigitAudioOFF[x].	Disable the SPDIF audio output of output x. ● x=1~4, disable the SPDIF audio output of single output port. ● x=9, disable the SPDIF audio output of all output ports.	DigitAudio OFF with Output 4
Query Commands		
Status[x].	Check the input channel for output x	AV: 1->1
Status.	Check the input channel for all outputs	AV:1->1 … AV: 4-> 4
%9961.	Return the keylock status.	System Unlock!/System Locked!
%9962.	Check the power status	PWON
%9963.	Check the audio format of EDID database for input x	IN1: PCM … IN4: PCM
%9964.	Check the IP and subnet mask of the switcher.	IP 192.168.0.178 SB 255.255.255.0 DHCP 0
%9971.	Query connection status for all inputs, N means there is no source, Y means there is connected source.	In 1 2 3 4 Connect N Y Y N
%9972.	Query connection status for all	Out 1 2 3 4

Command	Function	Feedback Example
	outputs, N means there is no display, Y means there is connected display.	Connect Y Y N N
%9973.	Check the inputs HDCP status, N means it's not with HDCP, Y means it's with HDCP.	In 1 2 3 4 HDCP N Y Y N
%9974.	Check the outputs HDCP status, N means it's not with HDCP, Y means it's with HDCP.	Out 1 2 3 4 HDCP N Y Y N
%9975.	Check the I/O switch status.	In 1 2 3 4 Out 1 2 3 4
%9977.	Check the status of digital audio of all outputs, N is for "off", Y is for "on".	Out 1 2 3 4 Audio N N Y Y

5.2.4 EDID Management

The AVG-UHD4K-44 ships with a convenient EDID management table to facilitate effective communication between the displays and sources.

In factory default status (Status: 0000), the AVG-UHD4K-44 passes through the signals directly, input & output devices process the signal automatically. You can recall other saved EDID data by adjusting the 4-pin EDID DIP switcher or sending the corresponding RS232 commands.

5.2.4.1 Via RS232 commands

Dial the switchers to "1111" to enable software EDID management.

- **Recalling embedded EDID data:**

Send command "**EDID[X]B[y].**" to enable the input to recall the embedded EDID data of the AVG-UHD4K-44 . For example, send "**EDID[4]B[3]**" , the INPUT device (4) will gain embedded EDID data is that **720P 2D 2CH.**

- **EDID Copy**:

Send the command "**EDIDM[X]B[y].**" to enable the input to copy the EDID data of a display. For example, send "**EDIDM[1]B[4]**" , the INPUT device (1) will gain the EDID data from OUTPUT device(4).

- **Program Custom EDID data**:

Copy custom EDID data (.bin) to the control device (e.g. a PC) and program the data into the device by sending the command **EDIDUpgrade[x].**

Refer to *4.2.3 RS232 Communication Commands* for more EDID management commands (with grey background).

5.2.4.2 Via 4-pin EDID DIP switcher

Beside the software managed EDID table, the AVG-UHD4K-44 has a 4-pin EDID DIP switcher to manage EDID. Select the switches to recall corresponding EDID data

- **Embedded EDID data**: 10 sets in total, the chart below illustrate the 10 Embedded EDID data options.
- **Custom EDID data**: max of 3 sets
  The chart below shows switcher status for custom EDID No.12~14.

No.	Switcher Status	EDID information
Embedded EDID data		
1	0001	720P 2D 5.1CH
2	0010	720P 3D 5.1CH
3	0011	720P 2D 2CH
4	0100	720P 3D 2CH
5	0101	1080P 3D 5.1CH
6	0110	1080P 2D 5.1CH
7	0111	1080P 3D 2CH
8	1000	1080P 2D 2CH
9	1001	2016P 2D 5.1CH
10	1010	2016P 2D 2CH
Custom EDID data		
12	1100	Customizable
13	1101	Customizable
14	1110	Customizable

Note:

1) EDID information listed in the above chart is factory default data. Embedded EDID data can be updated by sending the command **UpgradeIntEDID[x].**.
2) Embedded EDID data can also be recalled via command **EDID/[x]/[y].**.

5.3 TCP/IP Control

5.3.1 Control Modes

TCP/IP default settings: IP is 192.168.0.178, Gateway is 192.168.0.1, and Serial Port is 8080. IP settings can be changed as needed, Serial Port cannot be changed.

- **Controlled by a single PC**

Connect a computer to the TCP/IP port of the AVG-UHD4K-44, and set its network subnet to the same as the default IP of the Unit (192.168.0.178).

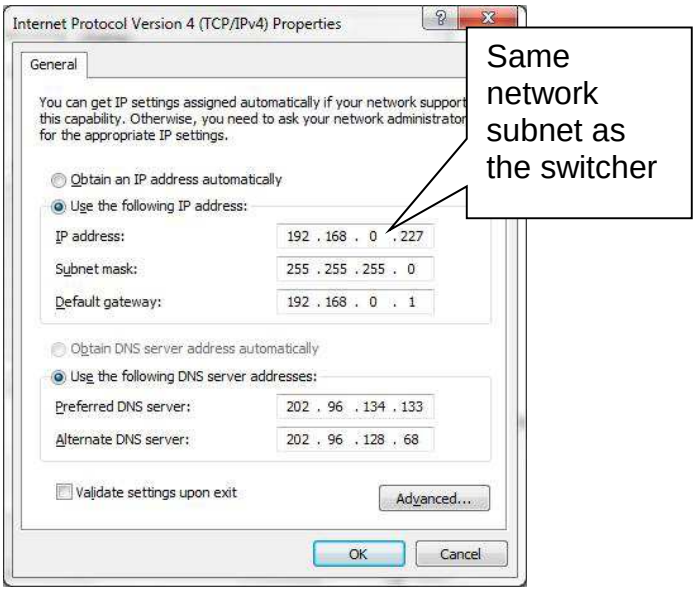

Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network support
this capability. Otherwise, you need to ask your network administrator
for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 227
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 202 . 96 . 134 . 133
Alternate DNS server: 202 . 96 . 128 . 68
Validate settings upon exit
Advanced...
OK
Cancel
Same network subnet as the switcher

Figure 5- 4 Modify the IP of PC

- **Controlled by PC(s) in LAN**

The AVG-UHD4K-44 can be connected with a router to make up a LAN with the PC(s), this allows it to be able to be controlled in a LAN. When controlling in this manor, just make sure that the AVG-UHD4K-44's network subnet is the same as the routers. Please connect as per the following figure for LAN control.

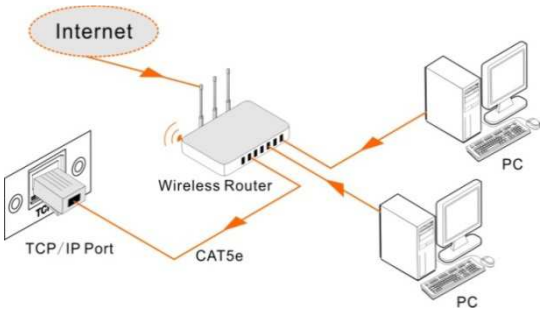


Figure 5- 5 Connect to LAN

Step1. Connect the TCP/IP port of the AVG-UHD4K-44 to an Ethernet port of the PC with twisted pair.
Step2. Set the PC's network subnet to the same as the Matrix Switcher. Please remember the PC's original network subnet setting.
Step3. Set the AVG-UHD4K-44's network subnet to the same as the router.
Step4. Set the PC's network subnet to the original setting.
Step5. Connect the AVG-UHD4K-44 and PC(s) to the router. In the same LAN, each PC is able to control the AVG-UHD4K-44 asynchronously.

Control is then possible via the TCP/IP communication software.

5.3.2 Control 4x4 HDMI Matrix Switcher via TCP/IP communication software

1) Connect a computer with TCP UDP software to the AVG-UHD4K-44. Open the TCP UDP software (or any other TCP/IP communication software) and create a connection, enter the IP address and port of AVG-UHD4K-44 (default IP:

192.168.0.178, port:8080):

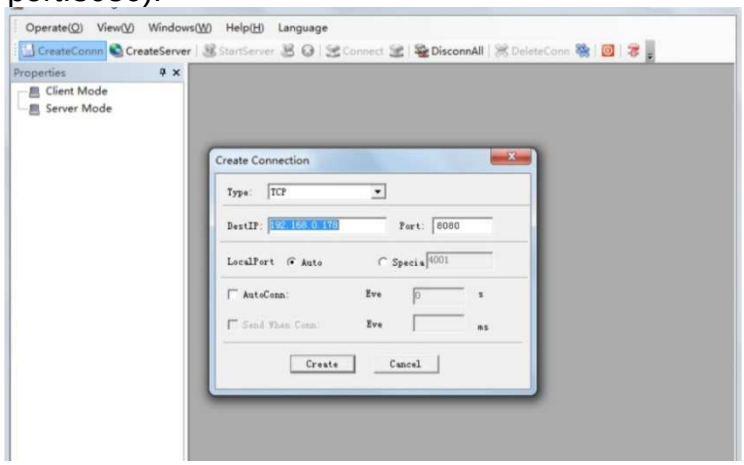


Figure 5- 6 Connect to TCPUDP

2) Enter commands in designated area to control 4x4 HDMI Matrix Switcher, see as below:

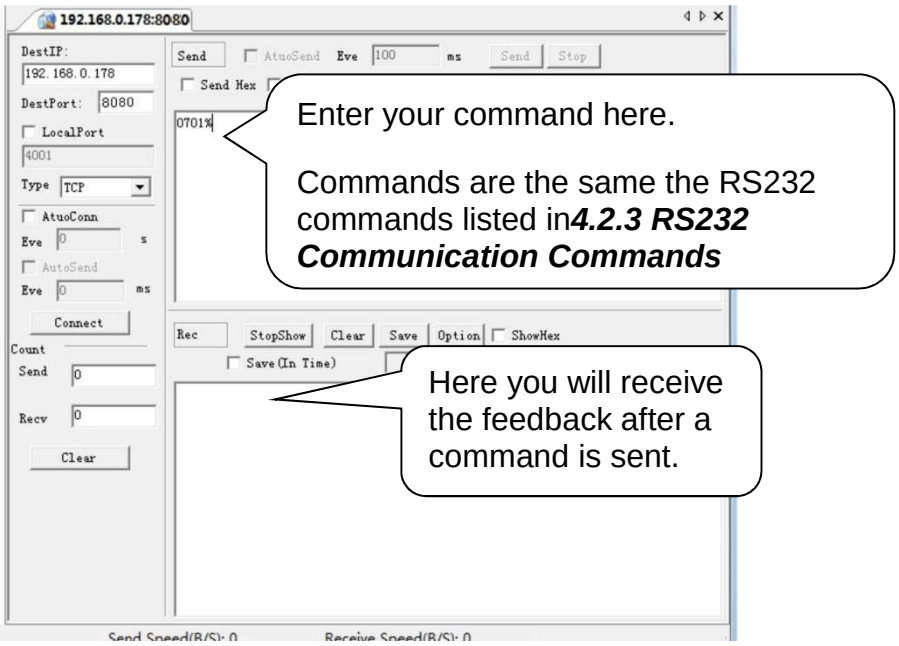


Figure 5- 7 Control interface of TCPUDP

5.3.3 Control 4x4 HDMI Matrix Switcher via web-based GUI

The 4x4 HDMI Matrix Switcher can also be controlled via a web-based GUI. It allows users to interact with the 4x4 HDMI Matrix Switcher through graphical icons and visual indicators.

Type **192.168.0.178**in your browser, it will enter the log-in window as shown below:

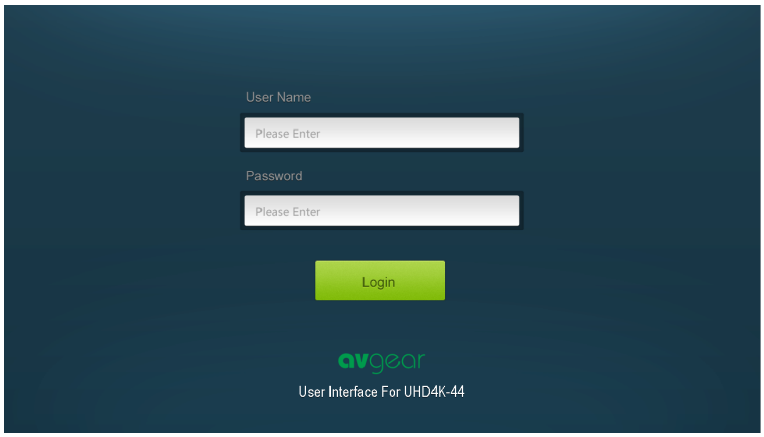


Figure 5- 8 Login GUI

This system divides into administrator and user mode.

Administrator mode: User name: admin; Password: admin (default setting)

User mode: User name: user; Password: user (default setting).

Note: Log in as admin to access more configuration options than available as a user. Here is a brief introduction to the interfaces.

5.3.3.1 Scene Menu

Type the user name: admin, password: admin, and then click **LOGIN**, it will show the Scene menu as shown below:

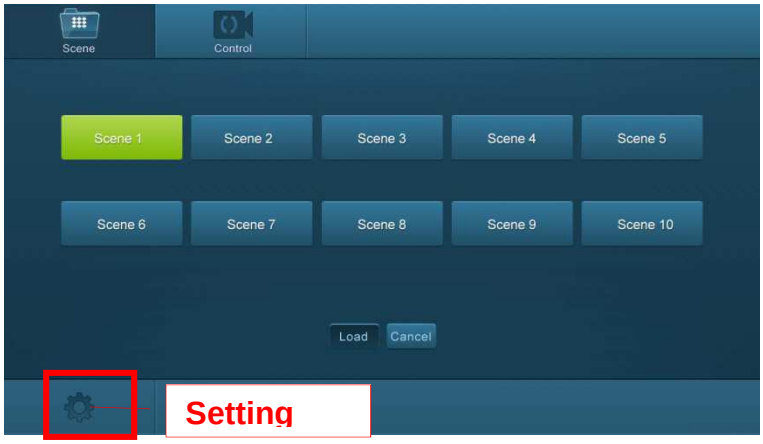


Figure 5- 9 Scene Menu

All ten scenes are shown in above interface.

Select a scene and then click **“Load**” to recall the selected scene.

Click “**cancel**” to cancel the current operation.

5.3.3.2 Control Menu

Click "**Control**" to enter the following GUI screen, it provides intuitive I/O connection switching.

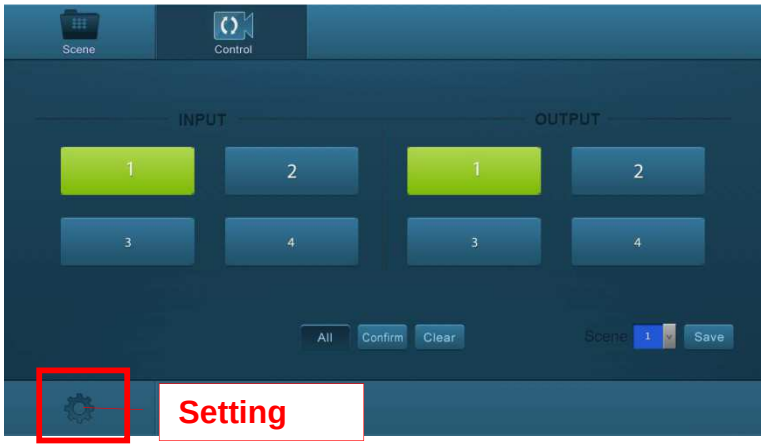


Figure 5- 10 Control Menu

The button matrix displays every possible connection between every input and output, users can select the connections by clicking the corresponding button.

Buttons 1~4 at the bottom right corner allow saving and recall for overall connection status. For example:

Step1: Select button1 in INPUT column

Step2: Select button 1 in OUTPUT column (If all OUTPUT ports are needed, you only need to click "All".)

Step3: Choose a scene that you want to save.

Step4: Click "**Confirm**" to save the setting or Click "**Clear**" to clear set up.

5.3.3.3 Configuration Properties

1. Configuration:

1) Click setting button to enter GUI configuration screen.

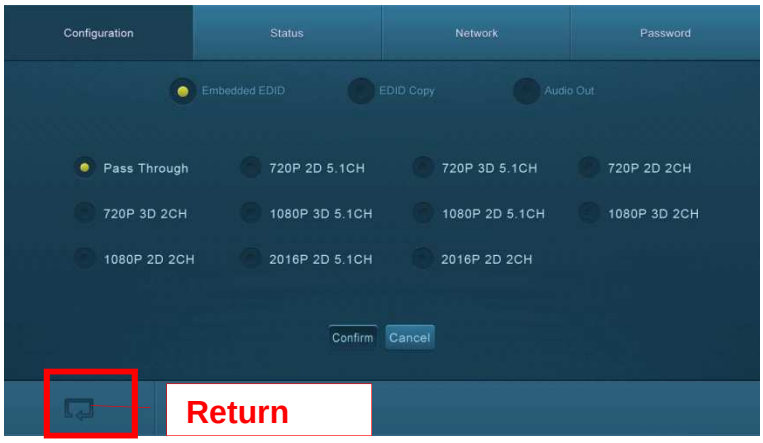


Figure 5- 11 Embedded EDID

All internal EDID settings of the AVG-UHD4K-44 are shown in the above interface. Users can select the EDID in accordance with actual needs.

2) Select "**EDID Copy"** to enter the following GUI screen:

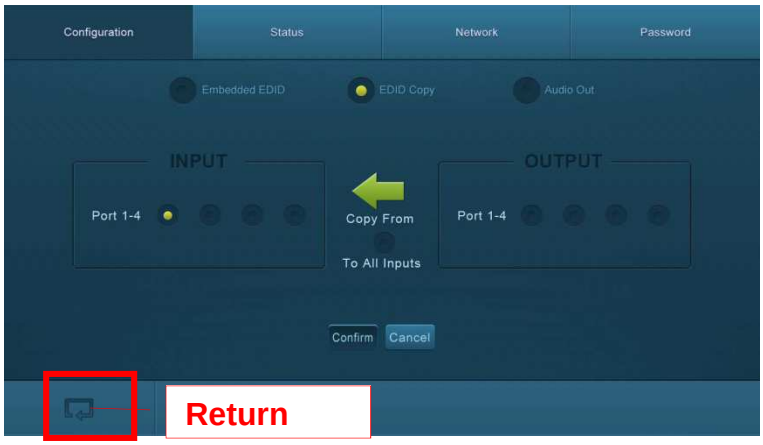


Figure 5- 12 Copy EDID

The EDID of the INPUT device can be gained from OUTPUT devices.

Step1: Select one INPUT port

Step2: Select one OUTPUT port which you want to copy its EDID.

Step3: Click "**Confirm**" to save the setting or click "**Cancel**" to cancel operation.

3) Select "**Audio Out**" to enter the following GUI screen to turn on/off the Audio Output channel.

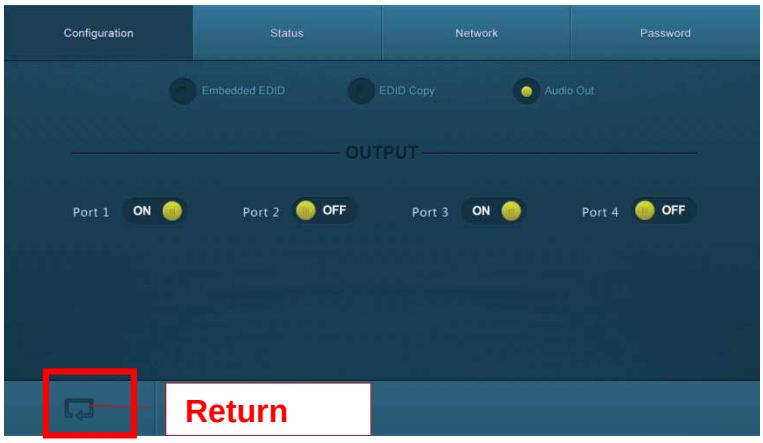


Figure 5- 13 Audio EDID

2. Status:

1) At the top of the interface, click “Status” to enter the following interface to modify the name and mode of this machine, this will then be displayed on the front LCD screen.

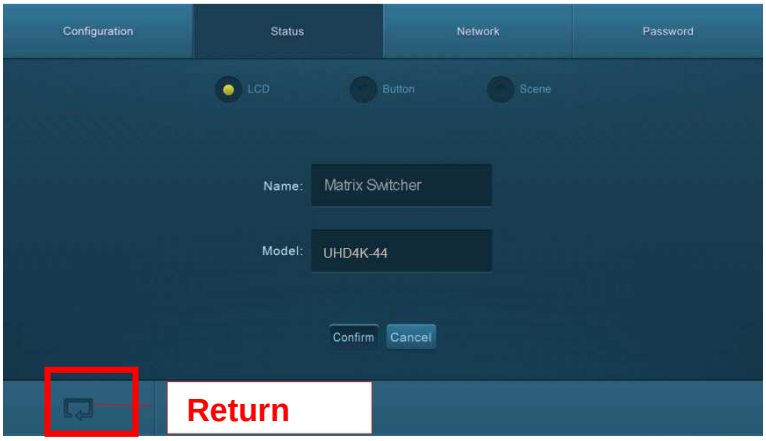


Figure 5- 14 Status- LCD

2) Select “**Button**” to enter the GUI screen to modify the names of buttons.

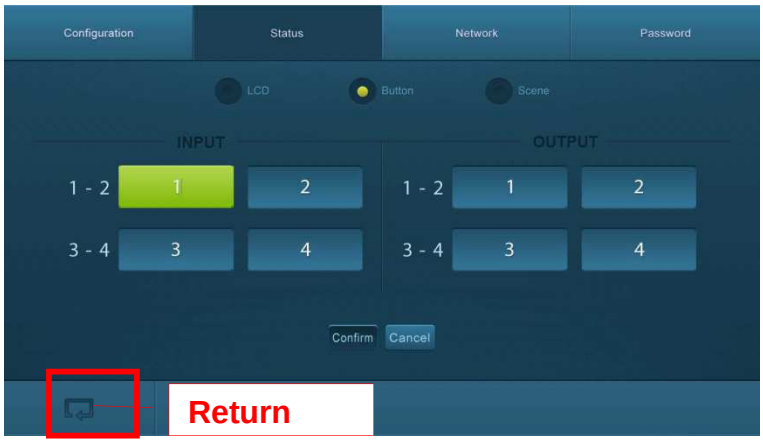


Figure 5- 15 Status- Button

3) Select “**Scene**” to enter the following GUI screen to modify the name of scenes.

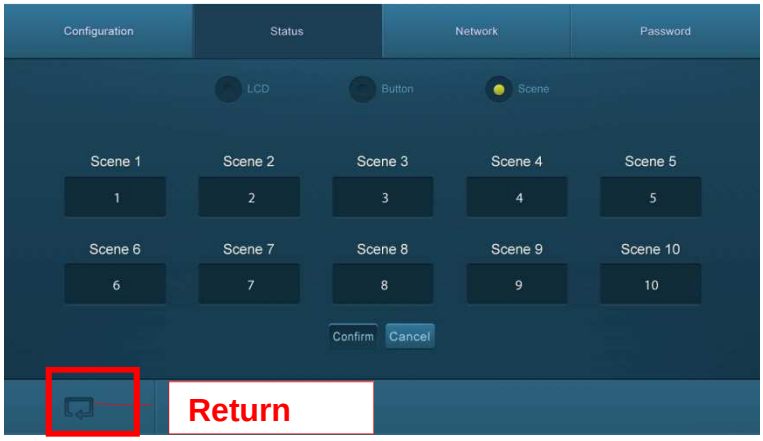


Figure 5- 16 Status-Scene

3. Network:

At the top of the interface, click “**Network**” to enter the following GUI screen to Query and configure network settings including MAC address, IP address, subnet mask, and Gateway.

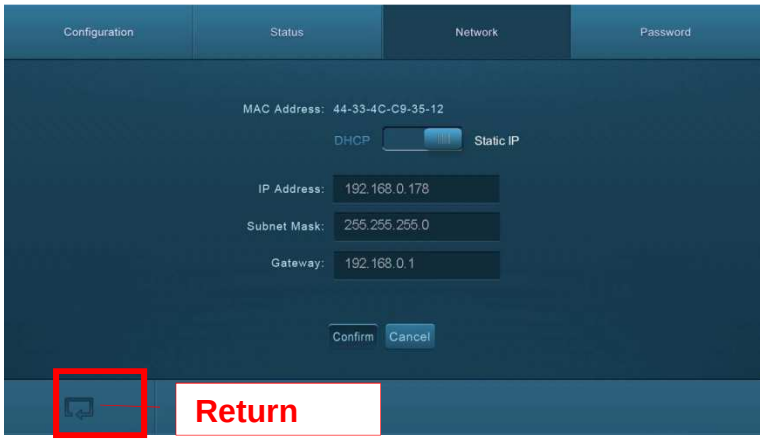


Figure 5- 17 Network

5. Password

At the top of the screen, click “**Password**” to enter the following interface to Query and modify the admin or user password.

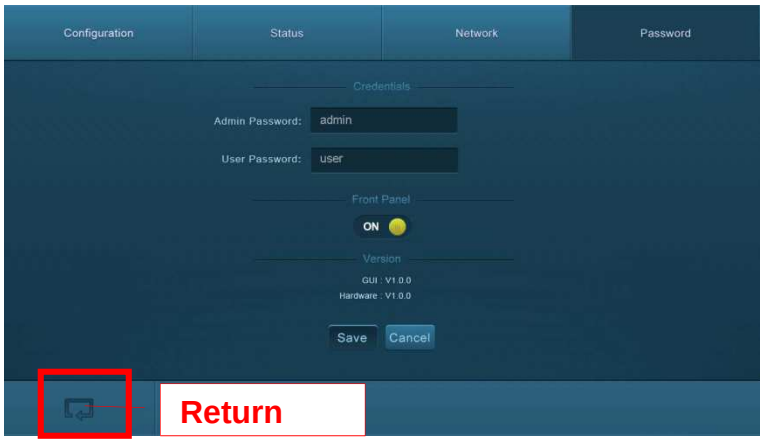


Figure 5- 18 Password

In the above screen, click on the Front Panel to enable or disable the Front Panel buttons.

5.3.4 TCP/IP Configuration

IP address, subnet mask, and the Gateway of AVG-UHD4K-44 can be modified via GUI from the above description, but beyond that users can configure the IP port, including IP reset, password reset, and IP module firmware update using the Webserver.

Type the Webserver address (Default: 192.168.0.178:100, changeable) in your browser. Enter correct username and password to log in the Webserver:

Username: admin; **Password**: admin

Here is the main configuration interface of the Webserver:

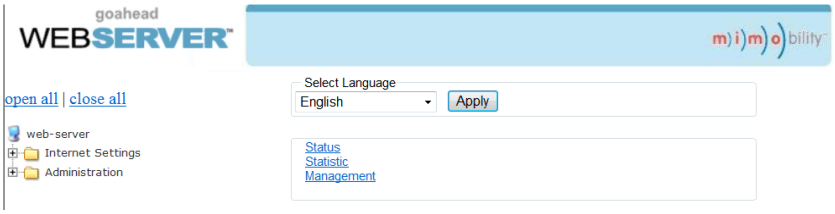


Figure 5- 19 TCP/IP Configuration

5.3.5 GUI Update

The GUI for the 4x4 HDMI Matrix Switcher supports online updates via http://192.168.0.178:100. Type the username and password (the same as the GUI log-in settings, modified password will be available only after rebooting) to log in to the configuration interface. After that, click **Administration** at the source menu to get to **Upload Program** as shown below:

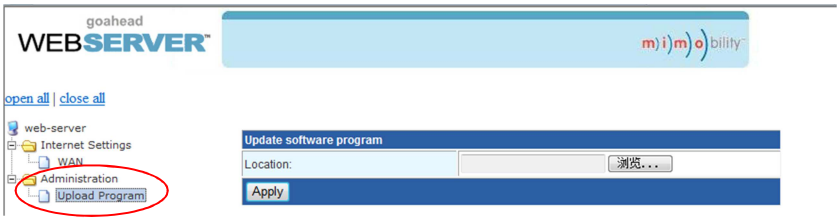


Figure 5- 20 GUI Update

5.4 Firmware Upgrade through USB port

The AVG-UHD4K-44 4x4 HDMI Matrix Switcher boasts a USB port for firmware upgrades on the rear panel.

Preparation: copy the upgrade software DfuSe Demonstration & upgrade file (.dfu) to the control PC.

Steps to upgrade the device:

Step1. Connect the control PC to the USB port of 4x4 HDMI Matrix Switcher.

Step2. Reboot the AVG-UHD4K-44 to enter upgrade mode. Press and hold buttons **2** & **3** when rebooting. The power indicator will keep blinking when in upgrade mode.

Step3. Double-click the icon of the upgrade software DfuSe Demonstration (see the figure below).

Figure 5-21 Icon of DfuSe Demonstration

It will pop up the following window:

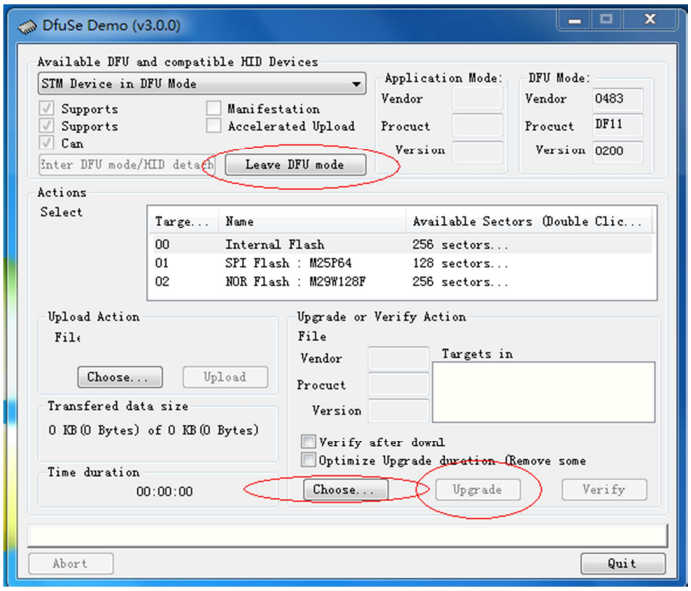


Figure 5- 22 Upgrade firmware via DfuSe Demonstration

Step4. Click **Choose…** to load desired upgrade file (.dfu).
Step5. Click **Upgrade** to start.

Note: Make sure the button **Leave DFU mode** is available to ensure control PC and the 4x4 HDMI Matrix Switcher is connected successfully.

6. Specification

Input		**Output**	
Input	4 HDMI	Output	4 HDMI, 4 SPDIF audio
Input Connector	Female Type-A HDMI	Output Connector	Female Type-A HDMI 3.5mm RCA connector
Standards	HDMI 2.0 & HDCP 2.2	Standards	HDMI 1.4 & HDCP 1.4
Control Ports			
Control Ports	1 IR IN (3.5mm jack) 1 TCP/IP (female RJ45) 1 RS232 (3-pin pluggable terminal block)		
General			
EDID Management	In-built EDID data and manual EDID management		
Audio Signal	Dolby Digital, DTS, DTS-HD		
Max Resolution	4Kx2K, 1080P 3D	Transmission Distance	4Kx2K@60Hz ≤15m
Power Supply	DC 12V 2A	Power Consumption	13.3W (Full Load) 4.4W (Standby)
Dimension (W*H*D)	436 x 44 x 235 mm	Weight	1.77Kg
Temperature	0 ~ 50℃	Reference Humidity	10% ~ 90%

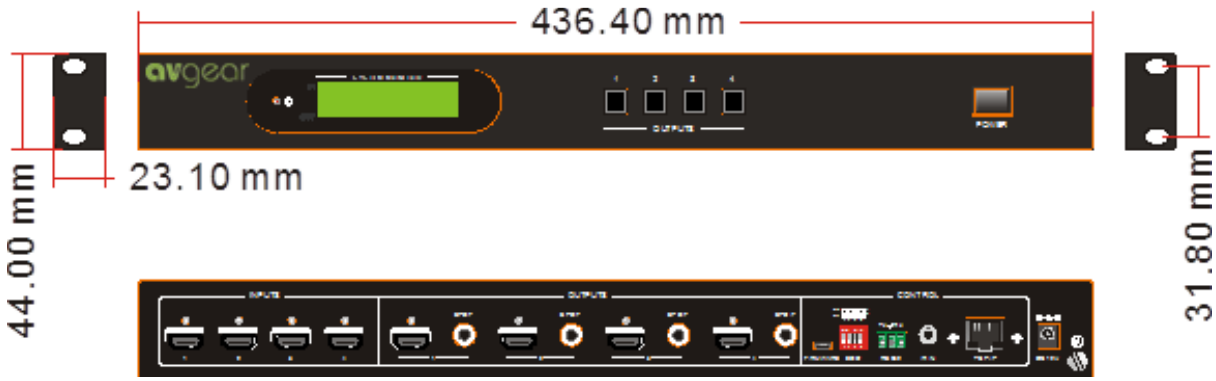
Note: AVGear recommends using quality HDMI cables in order to maintain preferred transmission distance and performance.

Supported Resolutions：

Display Ratio	**Resolutions**
4K	4096x2160 (30,50,60 Hz), 3840x2160 (24,25,30 50 60 Hz)
21:9	2560x1080 (60Hz)
16:9	1920x1080(1080P 3D), 1600x900, 1366x768, 1280x720, 1024x576 (60Hz)
16:10	1920x1200,1680x1050, 1440x900, 1360x768,1280x800 (60Hz)

4:3	1600x1200,1400x1050, 1280x1204,1024x768, 800x600,640x480 (60Hz)

7. Panel Drawing



8 Troubleshooting & Maintenance

Problems	Causes	Solutions
Color loss or no video signal output	The connection cables may not be connected correctly or may be faulty	Check whether the cables are connected correctly and in good working condition
	Failed or loose connection	Make sure the connection is firm
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input/output end
	Failed or loose connection	Make sure the connection is good
	Input source is with HDCP while the HDCP compliance is switched off.	Send command /%[x]:[1]. to change HDCP compliance status.
	The display doesn't support the input resolution.	Switch to another input source or enable the display to learn the EDID data of the input.
No audio output	The amplifier is not able to decode HDMI audio	Change amplifier
Cannot control the device via front panel buttons	Front panel buttons are locked	Send command /%Unlock; to unlock
Cannot control the device via IR remote	The battery has run out	Change battery
	The IR remote is faulty	Send it to an authorized dealer for repairing
	Beyond the effective range of the IR signal or not pointing at the IR receiver	Adjust the distance and angle and point right at the IR receiver.
Power Indicator remains off when powered on	Failed or loose power connection	Check whether the cables are connected correctly
EDID management does not work normally	The HDMI cable is broken at the output end	Change for another HDMI cable in good working condition
There is a blank screen on the display when switching	The display does not support the resolution of the video source	Switch again
		Manage the EDID data manually to make the resolution of the video source automatically

		compliant with the output resolution.
Cannot control the device by control device (e.g. a PC)through RS232 port	Wrong connection	Check to ensure connection between the control device and the unit
	Wrong RS232 communication parameters	Type in correct RS232 communication parameters: Baud rate:9600; Data bit: 8; Stop bit: 1; Parity bit: none
	Broken RS232 port	Send it to an authorized dealer for repair
Static becomes stronger when connecting the video connectors	Poor grounding	Check the grounding and make sure it is connected well.
Cannot control the device by RS232 / IR remote / front panel buttons	The device has a previous fault	Send it to an authorized dealer for repair

If your problem persists after following the above troubleshooting steps, seek further help from your authorized dealer.